In The Claims

Claim 17 has been cancelled and without prejudice.

Claim 1 has been amended as follows:

1. (Twice Amended) A cooling stage for a semiconductor substrate comprising:

a pedestal having a substantially planar top surface,

a first plurality of circular grooves concentrically formed in said top surface, and

a second plurality of linear grooves formed in radial directions emanating from a center of said top surface in fluid communication with each and everyone of said first plurality of circular grooves allowing a cooling fluid to flow therethrough when said semiconductor substrate is positioned on said top surface of the pedestal, said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 1 mm and about 7 mm, and a depth between about 1 mm and about 7 mm.

Claim 2 has been amended as follows:

2. (Amended) A cooling stage for a semiconductor substrate according to claim 1, wherein said first plurality is at least three and said second plurality is at least two.

Claim 3 has been amended as follows:

3. (Amended) A cooling stage for a semiconductor substrate according to claim 1, wherein said first plurality is at least five and said second plurality is at least three.

Claim 5 has been amended as follows:

5. (Amended) A cooling stage for a semiconductor substrate according to claim 1, wherein said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 3 mm and about 5 mm, and a depth between about 1 mm and about 3 mm.

Claim 8 has been amended as follows:

8. (Twice Amended) A method for cooling a semiconductor substrate comprising the steps of:

providing a cooling stage comprising a wafer pedestal equipped with a grooved top surface thereon, said grooved top surface comprises a first plurality of circular grooves concentrically formed in said top surface and a second plurality of linear grooves formed in radial directions emanating from a center of said top surface in fluid communication with each and everyone of said first plurality of circular grooves, said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 1 mm and about 7 mm, and a depth between about 1 mm and about 7 mm,

positioning a heated semiconductor substrate on said grooved top surface,

flowing a cooling liquid through a cooling channel in said wafer pedestal to carry away heat transferred to said grooved top surface, and

flowing a cooling gas through said first and second plurality of circular and linear grooves to carry away heat from a backside of said heated semiconductor substrate.

Claim 9 has been amended as follows:

9. (Amended) A method for cooling a semiconductor substrate according to claim 8, wherein said first plurality of circular grooves comprises at least three circular grooves and said second plurality of linear grooves comprises at least two linear grooves.

Claim 10 has been amended as follows:

10. (Amended) A method for cooling a semiconductor substrate according to claim 8, wherein said first plurality of circular grooves comprises at least five circular grooves and said second plurality of linear grooves comprises at least three linear grooves.

Claim 12 has been amended as follows:

12. (Amended) A method for cooling a ~~semiconduc~~tor substrate according to claim 8 ~~further~~ comprising the step of providing said ~~grooved~~ top surface with a plurality of circular and linear grooves, each having a width between about 3 mm and about 5 mm, and a depth of between about 1 mm and about 3 mm.

Claim 16 has been amended as follows:

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16. (Twice Amended) A wafer pedestal effective for cooling a high temperature processed wafer comprising:

a wafer pedestal having a substantially planar top surface,

at least three circular grooves concentrically formed in said top surface, and

at least two linear grooves formed in radial directions emanating from a center of said top surface in fluid communication with each and everyone of said at least three circular grooves for flowing a cooling fluid therethrough cooling said high temperature processed wafer positioned thereon.

Claim 18 has been amended as follows:

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18. (Amended) A wafer pedestal effective in cooling a high temperature processed wafer according to claim 16, wherein said at least three circular grooves comprises at least five circular grooves and wherein said at least two linear grooves comprises at least three linear grooves.

Claim 19 has been amended as follows:

19. (Amended) A wafer pedestal effective for cooling a high temperature processed wafer according to claim 16 wherein said at least three circular grooves comprises nine circular grooves and said at least two linear grooves comprises three linear grooves each having a width of about 2 mm and a depth of about 1 mm.

Claim 20 has been amended as follows:

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20. (Amended) A wafer pedestal effective in cooling a high temperature processed wafer according to claim 16, wherein said cooling fluid flowing through said circular and said linear grooves is an inert gas selected from the group consisting of argon, nitrogen and helium.

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Objections To The Drawings

The drawings are objected to for informalities noted in Paper No. 2.